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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,771	10/20/2003	Hou-Wei Lin	LINH3021/EM	9601
23364 7590 12/29/2006 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			EXAMINER WARE, CICELY Q	
			ART UNIT	PAPER NUMBER
			2611	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/29/2006	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/687,771

Applicant(s)

LIN ET AL.

Examiner

Cicely Ware

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 5-7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because:

a. Fig. 3, elements 15, 31 and 32, it is office policy to request from applicants that submitted figures contain both text and numerical labels to allow individuals viewing each figure to be able to determine the designation of each element in the figure without having to go into the specifications.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities:

a. Pg. 1, line 7, examiner suggests applicant provide all actual US Patent and Patent Application numbers for clarification purposes.

Appropriate correction is required.

***Claim Objections***

3. Claims 1 and 3 are objected to because of the following informalities:
- a. Claim 1, line 6, applicant uses "analog-to digital". Examiner suggests using "analog-to-digital" for clarification purposes.
  - b. Claim 3, line 3, applicant uses "the output signal". Examiner suggests using "an output signal" for clarification purposes.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (Fig. 1) in view of Agazzi et al. (US Patent Application 2003/0007581).

With regard to claim 1, Applicant's Admitted Prior Art (Fig. 1) discloses A transceiver of a communication system, comprising: a front-end receiver (input signal, AAGC) for generating a first signal with a pre-cursor component and a post-cursor component according to a receiving signal, wherein the front-end receiver further includes an inverse partial response (IPR) filter to compensate an ISI introduced by a partial response filter in a transmitter part of a remote transceiver (IPR); a noise

canceller (NEXT, Echo) coupled to the front-end receiver for generating a second signal through eliminating the noise of the first signal; and an analog-to digital (A/D) converter to receive the output signal of the IPR filter and convert to the first signal with a digital format.

However Applicant's Admitted Prior Art does not disclose a Feed-Forward Equalizer (FFE) coupled to the noise canceller for generating a third signal through eliminating the pre-cursor component in the second signal according to a transfer function including a plurality of adjustable constants, wherein the adjustable constants includes a main-tap and the value of the main-tap is predetermined; and a decoder coupled to the FFE for decoding the third signal and eliminating the post-cursor component in the third signal.

However Agazzi et al. discloses in (Fig. 2) a Feed-Forward Equalizer (FFE) (26) coupled to the noise canceller (232, 228) for generating a third signal through eliminating the pre-cursor component in the second signal according to a transfer function including a plurality of adjustable constants, wherein the adjustable constants includes a main-tap and the value of the main-tap is predetermined (Pg. 8, [0107], lines 1-15) ; and a decoder (38) coupled to the FFE for decoding the third signal and eliminating the post-cursor component in the third signal (Pg. 34 [0352], lines 1-17) (Pg. 8, [0104], lines 5-14, [0105], lines 1-12, [0106], lines 1-6, [0107], lines 1-15, [0109], lines 1-20, [0111], lines 1-7) .

Therefore it would have been obvious to one of ordinary skill in the art to modify Applicant's Admitted Prior Art in view of Agazzi et al. to incorporate disclose a

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Feed-Forward Equalizer (FFE) coupled to the noise canceller for generating a third signal through eliminating the pre-cursor component in the second signal according to a transfer function including a plurality of adjustable constants, wherein the adjustable constants includes a main-tap and the value of the main-tap is predetermined; and a decoder coupled to the FFE for decoding the third signal and eliminating the post-cursor component in the third signal in order to adaptively determine and achieve the highest level of signal quality consistent with a given maximum power consumption specification and adaptively determine and achieve the lowest level of power consumption consistent with a given minimum signal quality specification (Agazzi et al., Pg. 2, [0018], lines 1-7).

(2) With regard to claim 2, claim 2 inherits all the limitations of claim 1.

Applicant's Admitted Prior Art (Fig. 1) further discloses wherein the front-end receiver further includes a sample-and-hold circuit to sample and hold the receiving signal (A/D FIFO).

(3) With regard to claim 3, claim 3 inherits all the limitations of claim 2.

Applicant's Admitted Prior Art (Fig. 1) further discloses wherein the transceiver further includes a timing recovery coupled to the decoder (decoding system) for controlling the sample-and-hold circuit according to the output signal of the decoder (timing recovery).

(4) With regard to claim 4, see rejection of claim 1.

***Allowable Subject Matter***

6. Claims 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 571-272-3047. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571-272-3021. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

***Cicely Ware***

cqw  
December 21, 2006

  
MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER